REMARKS

Reconsideration is requested.

Claims 2, 3, 5-8, 11, 12, 17-32, 34, 35, 37-40 and 42-44, have been canceled, without prejudice. The claims have been amended, without prejudice. Claims 1, 4, 9, 10, 13-16, 33, 36, 41 and 45-50 are pending. Support for the amendments may be found throughout the specification.

The Section 102 rejection of claims 1, 5-10, 14-16, 33, 36-41, 43 and 46-50 over Field (U.S. Patent No. 6,593,140) is obviated by the above amendments. The cited art fails to teach each and every aspect of the claimed invention. Withdrawal of the Section 102 rejection is requested.

The Section 102 rejection of claims 1, 4-7, 33, 36-41 and 45-50 over Gorfien (U.S. Patent Application Publication No. 2006/0148074) is obviated by the above amendments. The cited art fails to teach each and every aspect of the claimed invention. Withdrawal of the Section 102 rejection is requested.

To the extent not obviated by the above amendments, the Section 103 rejection of claims 1, 4-10, 13-16, 33, 36-41 and 43-50 over Field (U.S. Patent No. 6,593,140) and Gorfien (U.S. Patent Application Publication No. 2006/0148074) is traversed. Reconsideration and withdrawal of the rejection are requested in view of the above and the following comments.

The Examiner is understood to believe that it would have allegedly been obvious to have used the ferric ammonium citrate from Field in the medium of Gorfien in the

amounts defined in Gorfien to grow myeloma cells. The claimed invention would not have been obvious in view of the cited art.

While Gorfien might embrace via its general disclosure the use of a transferrin free medium in the growth of myeloma cells, Gorfien does not explicitly demonstrate that this is possible.

The ordinarily skilled person would not have taken the Gorfien disclosure in isolation. Rather, the ordinarily skilled person would have considered the cited art in the context of all of the art available at the time the present application was filed and will take particular note of the art specifically mentioned in the present application. Page 3 of the present application, for example, notes that WO 92/05246 (of record) indicates that CHO cells can be grown in a medium in which transferrin is replaced with 0.6-16 mg/L iron, provided by ferric citrate, but that myeloma cells cannot be grown in the same medium.

This is effectively the same disclosure as Gorfien. Gorfien demonstrates that CHO cells can be grown in a medium in which transferrin is replaced with an $FeCl_3$ - sodium citrate chelate at 60 μM concentration (Example 4 and Fig 2). However, Gorfien provides no experimental details as to whether myeloma cells can also be grown in this medium.

The ordinarily skilled person would assume, from the earlier disclosure of WO 92/05246 that myeloma cells would be unlikely to be able to grow in that medium. There is nothing in Gorfien that would persuade the ordinarily skilled person otherwise.

This result of WO 92/05246 is also confirmed by the results of Neumannova et al (In vitro Cell Dev. Biol., 31:625-632 (1995)) (of record) mentioned on page 4 of the present application, which also illustrates that when ferric citrate replaces transferrin in a growth medium at concentrations of 0.2 mg/L iron – i.e. a slightly lower concentration than WO 92/05246 – a human epithelial cell line could grow, but myeloma cell lines could not.

Thus, one of ordinarily skill in the art would not have found Gorfien to teach that it is within the ordinary skill of the art to use particular levels of iron to culture myeloma cells. The totality of the Gorfien disclosure does nothing to dispel the teaching in the art that myeloma cells will not grow when particular low iron concentrations replace the use of transferrin. There is no evidence in Gorfien to sway one of ordinary skill from the prevailing wisdom, i.e., that myeloma cells behave differently from CHO cells and do not grow in low iron concentrations in the absence of transferrin.

The Examiner is understood to believe that the method of claim 10, for example, would have been obvious from a use of the iron concentrations of Gorfien together with the ferric ammonium citrate of Field.

Gorfien does not demonstrate in an enabling manner however that myeloma cells grow when transferrin is replaced by chelated iron. Field shows that neither myeloma cells nor hybridoma cells show long term growth when transferrin is replaced by ferric ammonium citrate at 0.2 mg/L and that hybridoma cells could not grow in ferric ammonium citrate alone at between 0.1 and 10 mg/L. As is stated in the present

application on page 7, the prior art has shown that the ability of hybridoma and myeloma cells to use iron present in the medium with a simple iron carrier, such as a citrate, and in the absence of transferrin or a lipophilic or nitrogen-containing chelator is different from the corresponding ability of, for example, CHO cells. One of ordinary skill will appreciate that the overall teaching of the prior art is that hybridoma and myeloma cells are the same in their ability to use iron in a transferrin-free culture medium. The teaching that the ordinarily skilled person would obtain from Field, therefore, is that as hybridoma cells do not grow in 0.1 – 10 mg/L iron, neither will myeloma cells. This is supported by the absence of long term growth of myeloma cells at 0.2 mg/L ferric ammonium citrate (FAC).

Accordingly, from Field, the ordinarily skilled person would appreciate that increasing the concentration of FAC from 0.2 mg/L to 10 mg/L, as was tried for hybridoma cells, would not enable long term growth of myeloma cells.

There is nothing to have motivated the ordinarily skilled person to combine the disclosure of Gorfien with the disclosure of Field to have made the presently claimed invention. The Examiner is understood to believe that Gorfien discloses the growth of myeloma cells at higher concentrations of iron than recited in Field and, given the absence of growth in Field, the ordinarily skilled person would allegedly have considered using the higher concentrations of Gorfien with the specific iron providing compound, FAC, in Field. However, this reasoning is respectfully submitted to fail for at least the following two reasons:

(a) Gorfien does not demonstrate successful growth of myeloma cells in media with any concentration of iron and in the absence of transferrin or a nitrogen containing chelator; and

(b) the ordinarily skilled person would have taken from Field that neither myeloma nor hybridoma cells would grow in transferrin-free media with FAC at concentrations of 0.1 – 10 mg/L.

Accordingly, the applicants submit that the claimed invention would not have been obvious in view of the cited combination of art.

The Examiner is further urged to appreciate that the applicants have discovered that ferric ammonium compounds are used more efficiently by myeloma cells than ferric citrate, for example. This would not have been obvious in view of the cited combination of art.

Figures 1 and 2 of the present application demonstrate that ferric citrate must be present at ten times the concentration of a ferric ammonium compound in an equivalent culture medium. This feature is neither taught nor suggested by the cited combination of art. Withdrawal of the Section 103 rejection is requested.

The clams are submitted to be in condition for allowance and aa Notice to that effect is requested. The Examiner is requested to contact the undersigned, preferably by telephone, in the event anything further is required.

Respectfully submitted,

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